

REMARKS

This amendment is in response to the Official Action mailed September 20, 2007. In the present paper, claim 1 is amended and claims 5 & 6 are canceled. Claims 11-16 were canceled in a previous paper. Claims 1-4, 7-10 and 17-22 are now presented for the Examiner's consideration in view of the following remarks.

The Present Invention

The present invention is directed to a method and apparatus for sampling a stream of gaseous material containing a target sample component. As claimed in amended independent claim 1, a temperature of the high temperature process stream is above a boiling point of a target sample component. In the method of claim 1, a low temperature zone of a sampling system is evacuated using a vacuum pump. A portion of the high temperature process stream is admitted into the low temperature zone through an orifice, and a stable vacuum pressure is maintained in the low temperature zone. A sample from the low temperature zone of the sampling system is introduced into test equipment through a sample introduction valve. A temperature of the low temperature zone is maintained above a boiling point of the target sample component at the stable vacuum pressure.

Independent claim 17 is directed to a method for sampling from a gaseous process stream. The stream is at a process stream temperature and pressure, the stream having at least one component with a first boiling point lower than the process stream temperature when at the process stream pressure. A gas sample from the process stream is admitted through an orifice into a sampling system, the sampling system having a sampling system temperature lower than

the first boiling point, the sampling system further having a sampling system pressure lower than the process stream pressure. The component in the gas sample has a second boiling point at the sampling system pressure, the second boiling point being lower than the sampling system temperature. A portion of the gas sample is introduced into a test instrument chamber.

Claim Rejections

In the Official Action, the Examiner has rejected claims 1-10 and 17-22 under 35 U.S.C. § 112, second paragraph as indefinite. The Examiner alleges that claiming a high temperature zone and a low temperature zone is “vague and indefinite because chemicals have different boiling points which changes the high temperature and low temperature zone parameters.” The Examiner requests that the Applicants claim ranges for the high temperature zone and low temperature zone.

Discussion

Applicants have amended independent claim 1 to incorporate the limitations of dependent claims 5 and 6, and have canceled those dependent claims. All pending claims now contain limitations describing the temperatures of the process stream (high temperature process stream) and the sampling stream (low temperature zone).

Specifically, claim 1 now requires that the temperature of the high temperature process stream be above a boiling point of the target sample component at the process stream pressure, and that the temperature of the low temperature zone be above the boiling point of the target sample component at the stable vacuum pressure. Similarly, claim 17 requires that the process stream have at least one component with a first boiling point at the process stream pressure that

is lower than the process stream temperature, that the sampling system temperature be lower than the process stream temperature, and that the component have a second boiling point at the sampling system pressure that is lower than the sampling system temperature.

In each of the independent claims, Applicants have therefore defined the temperatures of the process stream (high temperature process stream) and the sampling stream (low temperature zone) in terms of the boiling points of the target sample component in those respective zones. Applicants submit that, for any given target sample component, those temperatures are thereby defined, and the claims therefore particularly point out and distinctly claim the invention.

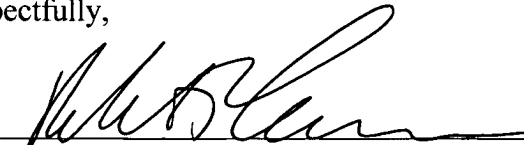
The Examiner states that the claims are indefinite “because chemicals have different boiling points which changes the high temperature and low temperature zone parameters.” Applicants assert that the claims are directed to sampling methods and are not limited to the sampling of any particular chemical. The temperatures of the process stream and sampling stream are not limited to the boiling points of any particular chemical, but are instead particularly pointed out and distinctly claimed as functions of boiling points of the chemical that is the target sample component.

Conclusion

Applicants therefore respectfully assert that claims 1-4, 7-10 and 17-22 are now in condition for allowance, and earnestly request that the Examiner issue a Notice of Allowance.

Should the Examiner have any questions regarding the present case, the Examiner should not hesitate in contacting the undersigned at the number provided below.

Respectfully,

By 

Robert T. Canavan
Reg. No. 37,592
Telephone: 908-707-1568

Canavan & Monka LLC
62 Grove Street
Somerville, NJ 08876

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